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TRACKS AND OTHER SIGNS OF THE HAIRY-NOSED OTTER (*Lutra sumatrana*)

Budsabong Kanchanasaka

Wildlife Research Division, Forest Technical Bureau, Royal Forest Department, Paholoyothin rd., Chatujak, Chatujak, 10900 Bangkok, THAILAND. buds@hotmai.com

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Abstract: The hairy nosed otter (*Lutra sumatrana*), an endemic species and the most rare otter species in Asia, has been rediscovered again in southern Thailand, after many years with no reliable information. Their main habitat appears to lie in two types of swamp forest; pure stands of *Melaluca cajeputi*, and evergreen swamp forest composed of a three-story formation of climax vegetation with a continuous crown canopy. Within the overall hairy nosed otter survey, indirect observations, such as tracks, faeces, and characteristic spraint sites, were collected to obtain more information on the ecological requirements of this species. Spraint composition was also analysed to compare its diet with other otters.

INTRODUCTION

Four species of otters are known to exist in Thailand (Lekagul and McNeely, 1977). The smooth coated otter (*Lutra perspicillata*), the Eurasian otter (*L. lutra*), and the small-clawed otter (*Amblonyx cinereus*) are all known to occur and their status has been assessed in many areas (Kruuk et al., 1994; Kanchanasaka, 1996, 1997). Though the hairy-nosed otter (*Lutra sumatrana*) was believed to occur in southern Thailand (Lekagul and McNeely, 1977), there had been no report or reliable information on this otter species for a long time; it was therefore considered to be a highly endangered species within its range in Thailand. The recent rediscovery of the hairy nosed otter in the Toa Daeng peat swamp forest in southern Thailand has allowed us to begin an intensive study of this species, including information on tracks, spraints, spraint sites, and diet composition, allowing us to increase the information available on the hairy nosed otter.

METHODS

Observations were made in a patch of swamp forest that was dominated by *Melaluca cajeputi*. This forest patch was about 0.5 km² and is situated near a canal connecting the forest to a large patch of peat swamp forest (Fig. 1). Approximately 10 spraint sites were found in this area and 'camera trapping' was used to check on use by the species. Direct observations were made whenever the opportunity arose.

Tracks were studied by collecting a plaster cast of print, and these were compared with the tracks of the smooth coated otter and the Eurasian otter from previously published material (van Strien, 1983; Brown et al., 1983). Spraint sites were recorded and compared with other Asian otters and the size and shape of the spraints were recorded. Spraint composition was analysed in order to differentiate the diet of hairy nosed otters from that of other otters. Diet composition is presented as frequency of occurrence (FO), relative frequency (RF), and bulk percentages (BP). The frequency of occurrence shows the percentage of spraints containing a particular prey item and the relative frequency, the number of occurrences of a particular item as a percentage of the total number of occurrences of all items in the sample (sum = 100%).

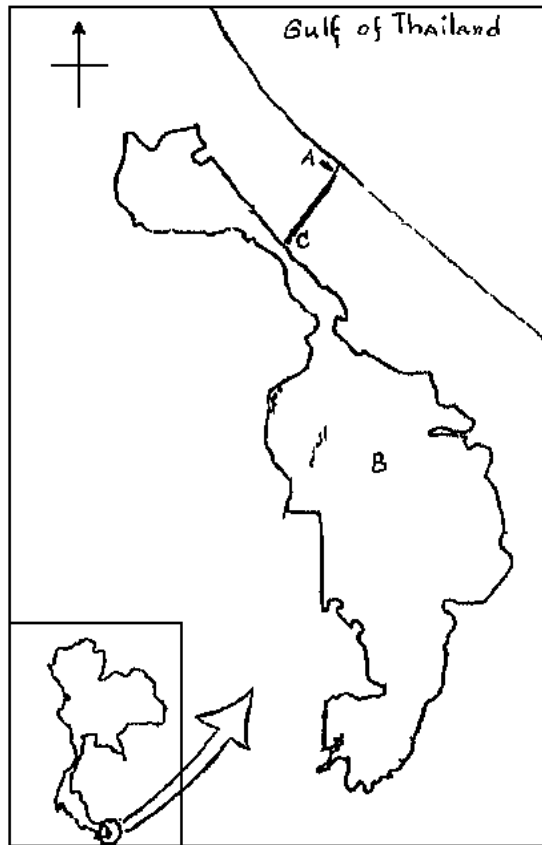


Figure 1. Location of the study site (click for larger version)
A = study site, B = Phru Toa Daeng Peat Swamp Forest, C = Canal that connected the swamp to the sea

RESULTS

Observations

From information gathered from both 'camera trapping' and direct observation, we estimated that one group of three otters inhabited this area.

Description of tracks

Tracks of the hairy nosed otter showed five toes on each foot, as with other otters. The web between the toes was often clear in soft substrate. The toes are small, pointed and often showed the imprint of the claw on sand or mud. The toe width is about 0.7 to 1.1 cm. The footprint of the hairy nosed otter is both smaller and less oval than the smooth coated otter, but similar to the track of the Eurasian otter, in both size and shape. The first and the fifth toe are not aligned and it is possible to separate the fore and hind feet from the position of the first and the fifth toes, i.e. the first toe in the hind foot is lower than the fifth toe to a much greater degree than in the fore foot. The position of the five toes in the fore foot is therefore more symmetrical than in the hind foot. The fore feet often showed four inter-digital and proximal pads, while the proximal pads are absent in the hind feet (Fig. 2-4). The fore feet are rather smaller than the hind feet (Fig. 4), the approximate width of the fore feet being 5.8 cm (n=24) and the hind feet 6.6 cm (n=16).

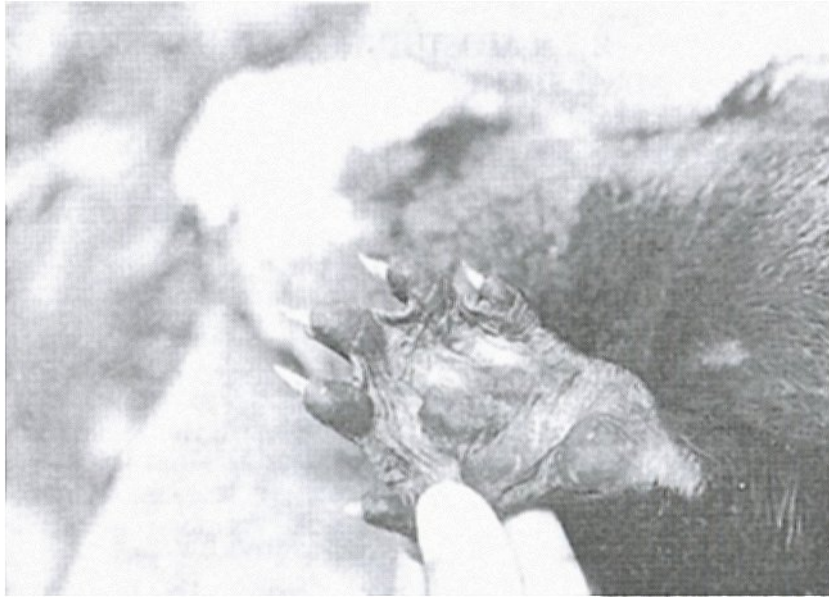


Figure 2. Fore foot of the hairy-nosed otter showing the interdigital pads



Figure 3: Fore foot of the hairy-nosed otter showing the interdigital pads



Figure 4: Fore left and hind left track from the plastercast

Although there were distinctions between the tracks of the three Asian otter species, the footprint of the hairy nosed otter and the common otter are very difficult to distinguish. The width of the footprint of the hairy nosed otter is slightly larger than that of the common otter, however, the width of some footprints overlapped with that of the common otter and, though the toe was rather small in size and pointed in shape, they were also very similar.

Spraints and Spraint sites

Hairy nosed otters deposit their faeces, or spraints, at similar sites to the other otter species. Most spraints were found on the ground and, whereas some were found in the shade of a tree, many were found on a mound in the open. Because hairy nosed otters live in swamp forest, where the forest floor is covered by water, many of the spraint sites were on a mound near a tree trunk or on the trunk or root edge of a fallen tree. Spraint sites could be as close as 2-5 metres apart and were situated near the waters edge, approx. 0.5 to 2 meters from the bank, or on a mound surrounded by water, at least 0.3 metres above the water level. The hairy nosed otter did not appear to produce a large pile of spraints, such as small-clawed and smooth coated otters do; however, they appeared to defecate frequently along a path. Spraints were shapeless, black in color when fresh, and did not have a strong smell like the smooth coated otter. Some spraints contained a green/brown mucous. The size and shape of spraints varied, from a tiny scat, a shapeless dropping (Fig. 5), to a cylindrical spraint (Fig. 6), usually around 1-1.5 cm in diameter. Some spraint sites contained 2-3 shapeless droppings, about 5 x 2.2 cm in size, whereas others had a single dropping, approximately 4.5 x 2.2 cm in size. Spraint sites on a tree trunk or log had both single tiny scats and multiple spraints of small dropping, with the multiple spraints often deposited on the base of a big tree. The single tiny spraint, sometimes containing only mucous, usually placed on a log or tree trunk, were often as close as 1 metre apart.

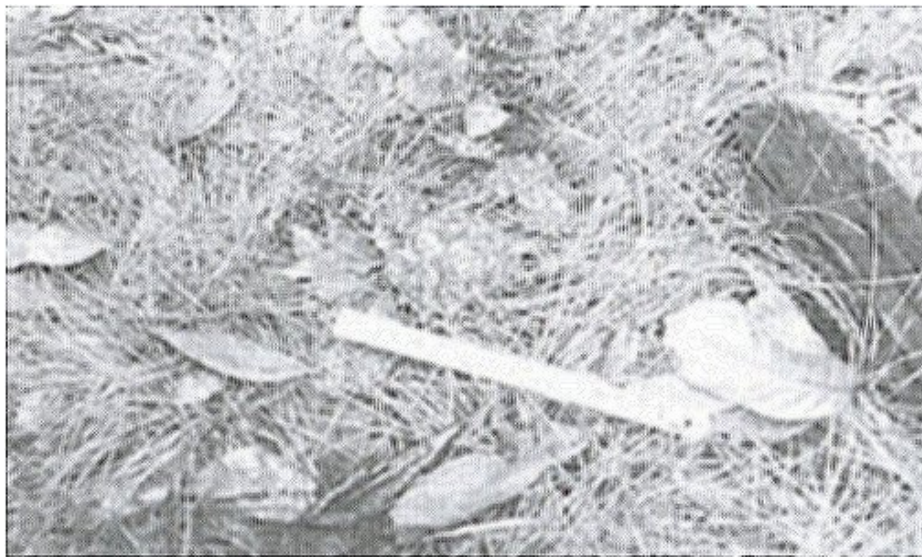


Figure 5. Shapeless dropping of the hairy-nosed otter



Figure 6: Cylindrical dropping of the hairy-nosed otter

Spraint composition

One hundred and twenty two spraints were collected over the nine months between March and November 2000 this period covering both the wet and dry seasons in southern Thailand.

Vertebrae were the remains most often found in spraint (Frequency occurrence: FO = 99.2 %, Relative frequency: RF = 93.8%), most of these being from fish (FO = 98.4 %, RF = 78.6 %), with snake being the second most important item (FO = 18 %, RF = 13.5). Invertebrate remains were also found, including crab and insect, though the latter were only found in small quantities (Table 1). The results indicate that fish were the main food item of the hairy nosed otter throughout the study period, with other vertebrates and invertebrates taken in small amounts.

Table 1: Occurrence of different prey categories in spraints

Prey Items	% spraints with (FO)	rel % spraints with (RF)
Fish	98.4	73.6
Frog	5.7	4.3
Snake	18.0	13.5
Mammal	1.6	1.2
Reptile	1.6	1.2
Crab	2.5	1.9
Insect	5.7	4.3

DISCUSSION

Our observations on tracks suggest that the tracks of the hairy nosed otter and the Eurasian otter are very similar and will be difficult to separate from each other if these two species occur in the same area. However, the tracks of hairy nosed otters and the smooth coated otter are different and can be separated by their size. The tracks of the smooth coated otter are large and often more than 8 cm wide (Kruuk et al., 1993). Whilst the track width of young or small female smooth coated otters can be smaller than 8 cm, their toes will be bigger and their shape oval, whereas the tracks of the hairy nosed otter are rather small and have pointed toes. The tracks of the hairy nosed otter and the small-clawed otter, the other otter species that shares the swamp forest habitat, are completely different in their shape and size. The small-clawed otters' footprints are smaller than 4.5 cm in width and never show claw marks (Kruuk et al., 1993).

According to Kruuk et al. (1993), there was large variation and overlap in appearance among the faeces of the three otter species (*L. lutra*, *L. perspicillata* and *Aonyx cinerea*) and hence evidence from spraint sites should be used with caution. The results of this study supported these findings, with some spraint types of the hairy nosed otter being very similar to those of the smooth coated otter and the Eurasian

otter. However, the type of spraint comprising many small droppings of faeces of the same age on a tree trunk belonged only to the hairy nosed otter.

Analysis of spraint composition indicated that the diet of the hairy nosed otter in this region contained many more fish remains than other vertebrate or invertebrates, similar to the diet of the smooth coated otter; whereas spraints of the Eurasian otter contain roughly equal amounts of amphibian or crab as fish (Kruuk et al., 1994; Kanchanasaka 1997).

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Résumé : Traces et autres Indices chez la Loutre de Sumatra en Thaïlande

Espèce endémique, la loutre de Sumatra (*Lutra sumatrana*), la plus rare de toutes les loutres d'Asie, a été redécouverte au sud de la Thaïlande. Son habitat se compose de deux catégories de forêt marécageuses: les rives vierges à *Melaluca cajeputi* et les forêts sempervirentes à trois strates de végétation climacique et canopée continue. Les traces, épreintes et caractéristiques des sites de marquage ont été étudiées afin d'accroître les connaissances en matière d'observation indirecte pour recenser l'espèce. La composition des épreintes a été également analysée afin de comparer son régime alimentaire avec celui d'autres espèces de loutres.

Resumen: Huellas y Otros Signos de la Nutria de Hocico Peludo

La nutria de hocico peludo (*Lutra sumatrana*), endémica de Asia y la más rara de las especies de nutrias de la región, fue nuevamente redescubierta en el sur de Tailandia. Su hábitat incluye dos tipos de bosques de pantanos: los arenales de *Melaluca cajeputi* y el bosque perenne de pantano compuesto por una formación vegetal de 3 estratos con dosel de copas continuo. Se estudiaron huellas, fecas y características de los sitios de marcaje para obtener información para realizar relevamientos de estas nutrias mediante observaciones indirectas. También se analizó el contenido de las fecas para comparar su dieta con la de otras nutrias.